FIRE FINDINGS

Fire investigation's newsletter for building successful origin and cause cases.

Electronic card catalogs may be the best place to start fire research

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You need information about a fire problem and the difficult part is where to start looking for some answers.

You first ask colleagues. They, too, may not have the information you need, so you might search the World Wide Web or post the question on listserves or electronic bulletin boards.

Part I: Where is the fire information?

Before you spend much time posting messages or researching Web sites, a more direct approach might be to use a subject-oriented database, or in our case, a bibliographic fire database.

At this point, you might be wondering what the difference is between a Web search and using an electronic card catalog, also called a bibliographic database. When Web crawlers (software that looks at every Web page in the world) seek words or information, they look at Web pages available to them. Web pages usually are created by an organization talking about one or more products, or by an individual discussing one or more ideas. However, robots index only the words at the beginning of a Web page, and they do it automatically without regard for conveying information.

An electronic card catalog, on the other hand, is the "gateway" to a library's collection. By searching for words (keywords, title words or an author's name), you can identify an item in a library collection. Libraries select these keywords to convey information about the concepts in any given article.

Searching the Web and using electronic card catalogs are two exciting research methods that are a bit misunderstood, so we'll focus on the electronic card catalog concept in this article. In the next issue of *Fire Findings*, we'll examine how to use search and megasearch engines to your advantage. With a better understanding of these tools, you may save time and be able to identify more appropriate information.

Libraries lend themselves well to electronic cataloging

Libraries are ideal vehicles for relaying information electronically because their information is organized in a logical and usually alphabetic or alpha/numeric arrangement. In 1986,

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FAST FACTS

New water heater technology prevents vapor ignition

American Water Heater Company, Johnson City, Tennessee, is introducing a technology that "prevents water heaters from igniting flammable vapors, such as gasoline," says the U.S. Consumer Product Safety Commission (CPSC) in a recent news release.

The new design, called Flame Guard Safety System™, confines the flame and prevents it from flashing out and igniting nearby vapors. It's expected to be available to consumers this fall.

Industrial motor-driven systems big energy users

What's using all the electricity in this country?

In a news brief from *EC&M* magazine, the U.S. Department of Energy (DOE) says 23 percent of the nation's electricity is supplied to industrial motor-driven systems. The systems account for two-thirds of that industry's overall electricity consumption.

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Part I: fire information ...

FIREDOC (**http://fris.nist.gov**), the bibliographic fire database at the National Institute of Standards and Technology (NIST), was made available to the worldwide fire community. It was the only free fire database available in the 1980s.

By the late 1990s, other free fire databases joined FIREDOC on the Web. They are:

- the National Fire Protection Association (NFPA) Library Catalog at **www.nfpa.org/Research/Library/library.html**
- and the Federal Emergency Management Administration's (FEMA) National Emergency Training Center (NETC) Card Catalog at **www.lrc.fema.gov**.

You may access these databases directly, or when you're at the Fire Research Information Service's (FRIS) home page, click on the section called Other Fire Resources. The fire organizations noted represent a cross section of fire organizations and their Web pages so you may sample what is happening around the world.

The FRIS collection contains more than 55,000 reports, books, journal articles and conference proceedings; more than 100 journal titles and audiovisual materials with emphasis on fire research and fire protection engineering; and fire testing literature from the 20th century, with some publications available from the 19th century.

The NFPA Library (Charles S. Morgan Technical Library) contains more than 10,000 books, 200 journal titles, and audiovisual items with an emphasis from fire protection and fire service organizations nationally and internationally. The published NFPA documents dating from the association's founding in 1896 also are included. The collection contains reference resources that reflect both the technical and association aspects of NFPA, such as statistical information, non-NFPA standards, and model building and fire codes.

The NETC Learning Resource Center (LRC) literature collection contains more than 50,000 books, reports, Executive Fire Officer papers, audiovisual items and 450 journal titles with an emphasis on supporting the instructional activities of the National Fire Academy and the Emergency Management Institute.

FLAIR/BRIX is the only fee-based fire database; it is available through the British Lending Museum and contains the references to the Building Research Establishment (UK) literature collection.

Many other databases contain information about fire, including the Engineering Index (also known as Compendex), Chemical Abstracts, World Textile Abstracts and Applied Science Index. Though these are fee-based databases, many public libraries will do free searches on them. You might visit a nearby library and use a computer terminal there.

The National Technical Information Service (NTIS) database (**www.ntis.gov**) contains information about all U.S. government unclassified publications and those of many foreign countries. Fire information is one of the many topics included in NTIS. It, too, is a fee-based database.

Two free federal government databases that have information of interest are the National Library of Medicine's PubMed (**www.ncbi.nlm.nih.gov/PubMed/**), which references national and international health-related matters, burn injuries, toxicity, etc., and the Library of Congress (**www.loc.gov**), which maintains information about all copyrighted books published in the United States.

How do the databases work?

The ways to search library databases are rather universal. If the software supports Boolean operators, which set conditions for including or excluding information, they allow the user to reduce the number of "hits" and improve the quality of the hits.

For this discussion, we will use the two most common Boolean operators — "OR" and "AND" — for narrowing and improving search results. The OR operator keeps all like terms (synonyms) together. In FIREDOC, the semicolon (;) acts as the OR Boolean operator. The AND operator narrows the search to the specific term(s) entered on the search line.

Let's use the FIREDOC database as a search example because you can apply the same concepts, though not necessarily the formats, to other databases.

FIREDOC is the electronic gateway (electronic card catalog) to the fire literature collection of the Fire Research Information Services (FRIS) at the Building and Fire Research Laboratory (BFRL) of NIST. NIST, formerly the National Bureau of Standards, was formed in 1901 and has been publishing fire test information since 1904. All BFRL fire publications are included, in addition to other fire documents going back to the 19th century.

Returning to the example, we have selected FIREDOC (**http://fris.nist.gov**) and, as we want to do a broad search, we click on Search All Fields and on OK. The search screen appears as illustrated in *Figure 1*.

Let's say you need information on nursing home fires. Place the cursor at the Words (separated by ;) line, type in HOSPITALS; NURSING HOMES; BOARD AND CARE. The semicolon (;) is the OR operator that keeps all like terms together. The other words were selected because the information is just as useful as "nursing homes." The computer provides hits wherever these words appear in the title, subject, identifier or abstract fields in the database.

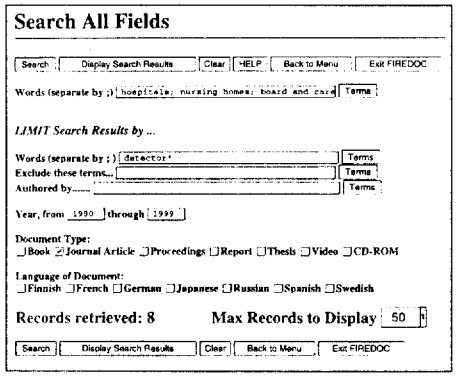

Figure 1. Instead of heading to a search engine on the World Wide Web for your next research project, first try using FIREDOC, a fire bibliographic database.

We don't want to look at all items in FIREDOC, however, since we only need information about smoke detectors in nursing homes. So move the cursor to where it says LIMIT Search Results by ... and type DETECTOR*.

This is a bit advanced, but going back to the early days of computers, the asterisk (*) serves as the "wildcard," and the computer will look for all keywords with DETECTOR or DETECTORS. This saves you from trying to remember if you want the singular or plural or from typing: DETECTOR; DETECTORS. Note that the search is not limited to smoke detectors, as it may not be a term the librarian selected. The term may have been too specific for the article as all types of detectors were discussed.

Perhaps you need to LIMIT the search even further, so we ask for only recent publication years (Year, from 1990 through 1999) and Document Type: Journal Article.

After clicking on the Search button, the "answer" appears at the bottom of the computer screen — records retrieved: 8.

Next, click the Display Search Results button and look at the references. If you want to see the keywords and/or abstract, click Change Format. They all look good, so click Print. If you want to do another search at this broad screen, click Back to Search. Once there, click Clear so that the earlier search will be erased. Continue with your searching.

Another thought occurs to you. What has Richard Bukowski written on detectors? The quickest way to find the answer is to click Back to Menu.

Select the option to Search by Author, Title, Keyword. Now you have a different FIREDOC screen in front of you but it works like the screen shown in *Figure 1*. Place the cursor on the Specific Author line and type Bukowski, R*. Note the wildcard, the asterisk (*), is used after the author's first initial in case he uses more than one initial. Another option is to click the Terms button and find him in the index.

Next, move the cursor to the LIMIT Search Results by ... and type the term DETECTOR* in the keyword field. Since you want to know everything Mr. Bukowski has published in the journal literature, do not limit the years — but do select the Journal Article option.

Click the Search button, then Display Search Results. Again, you may wish to find out more about the articles, so click Change Format and select the format that includes the keywords and/or abstract. After that, print Search Results.

If you have enough information, click the Exit FIREDOC button. Your next challenge is to obtain copies of the articles.

How to locate items you select

The easiest place to start is to look at the printed reference. If it's a BFRL/NIST article published after 1994, full-text copies are available on the BFRL/NIST Web site. The easiest way to get there is to click on BFRL Publications Online, which is located on the FRIS home page. Another way to access the site is to use the direct Web address, which is **http://fire.nist.gov/bfrlpubs**.

If it is an older BFRL/NIST item, the complete bibliographic reference will make it easy to obtain through any library. Many people also use FIREDOC as a quick way to find things in their own library collections.

The NTIS is the clearinghouse for other unclassified U.S. federal agency publications. In FIREDOC, we have included the NTIS ordering information so you can obtain items quickly. They accept major credit cards and also have an overnight delivery service. To contact NTIS in Springfield, Virginia, call (800) 553-6847 or (703) 605-6000; fax (703) 321-8547 or visit the Web site, **www.ntis.gov**.

Another tip: Government Printing Office publications are transferred to the NTIS usually one year after the publication date, as only NTIS keeps and can make copies of older federal publications. For all other references, consult your local librarian to see which is the best way to obtain an item.

Editor's Note: Nora H. Jason has a Master of Library Science degree from State University of New York in Albany. Her work on a NASA database project stimulated the beginning of the FRIS and the building of the fire research collection. Under her leadership, the collection has grown from zero to more than 55,000 items.

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